Amended AR for 2006

This report is required by law (7 USC 2143). Failure to report according to the regulations can result in an order to cease and desist and to be subject to penalties as provided for in Section 2150.

See reverse side for additional information.

Interagency Report Control No
0180-DOA-AN

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

ANNUAL REPORT OF RESEARCH FACILITY
(TYPE OR PRINT)

1. REGISTRATION NO. 84-R-0003 CUSTOMER NO. 1195

FORM APPROVED
OMB NO. 0579-0036

2. HEADQUARTERS RESEARCH FACILITY *(Name and Address, as registered with USDA, include Zip Code)*

COLORADO STATE UNIVERSITY
(b)(2)High, (b)(7)f
FORT COLLINS, CO 80523
(970) 491-7364

3. REPORTING FACILITY (List all locations where animals were housed or used in actual research, testing, teaching, or experimentation, or held for these purposes. Attach additional sheets if necessary.)

FACILITY LOCATIONS(sites)

See Attached Listing

REPORT OF ANIMALS USED BY OR UNDER CONTROL OF RESEARCH FACILITY *(Attach additional sheets if necessary or use APHIS FORM 7023A)*

A. Animals Covered By The Animal Welfare Regulations	B. Number of animals being bred, conditioned, or held for use in teaching, testing, experiments, research, or surgery but not yet used for such purposes.	C. Number of animals upon which teaching, research, experiments, or tests were conducted involving no pain, distress, or use of pain-relieving drugs.	D. Number of animals upon which experiments, teaching, research, surgery, or tests were conducted involving accompanying pain or distress to the animals and for which appropriate anesthetic, analgesic, or tranquilizing drugs were used.	E. Number of animals upon which teaching, experiments, research, surgery or tests were conducted involving accompanying pain or distress to the animals and for which the use of appropriate anesthetic,analgesic, or tranquilizing drugs would have adversely affected the procedures, results, or interpretation of the teaching, research, experiments, surgery, or tests. *(An explanation of the procedures producing pain or distress in these animals and the reasons such drugs were not used must be attached to this report)*	F. TOTAL NO. OF ANIMALS (Cols. C + D + E)
4. Dogs	0	179	11	0	190
5. Cats	25	211	138	0	349
6. Guinea Pigs	0	1071	697	0	1768
7. Hamsters	0	20	26	0	46
8. Rabbits	0	46	11	0	57
9. Non-Human Primates	0	0	0	0	0
10. Sheep	0	15	665	0	680
11. Pigs	0	379	172	0	551
12. Other Farm Animals Cattle	0	19	38	0	57
Goats	0	1	7	0	8
13. Other Animals Llama	0	5	0	0	5
Ferrets	0	27	0	0	27
Horses	0	51	9	0	60
White tailed deer	0	16	192	0	208

ASSURANCE STATEMENTS

1) Professionally acceptable standards governing the care, treatment, and use of animals, including appropriate use of anesthetic, analgesic, and tranquilizing drugs, prior to, during, and following actual research, teaching, testing, surgery, or experimentation were followed by this research facility.

2) Each principal investigator has considered alternatives to painful procedures.

3) This facility is adhering to the standards and regulations under the Act, and it has required that exceptions to the standards and regulations be specified and explained by the principal investigator and approved by the Institutional Animal Care and Use Committee (IACUC). A summary of all the exceptions is attached to this annual report. In addition to identifying the IACUC-approved exceptions, this summary includes a brief explanation of the exceptions, as well as the species and number of animals affected.

4) The attending veterinarian for this research facility has appropriate authority to ensure the provision of adequate veterinary care and to oversee the adequacy of other aspects of animal care and use.

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL
(Chief Executive Officer or Legally Responsible Institutional official)
I certify that the above is true, correct, and complete (7 U.S.C. Section 2143)

(b)(6), (b)(7)c

DATE SIGNED 8/21/07

APHIS FORM 7023
(AUG 91)

(Replaces VS FORM 18-23 (Oct 88), which is obsolete

PART 1 - HEADQUARTERS

AUG 24 2007

This report is required by law (7 USC 2143). Failure to report according to the regulations can result in an order to cease and desist and to be subject to penalties as provided for in Section 2150.

See reverse side for additional information.

Interagency Report Control No
0180-DOA-AN

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

CONTINUATION SHEET FOR ANNUAL REPORT OF RESEARCH FACILITY

(TYPE OR PRINT)

1. REGISTRATION NO. CUSTOMER NO.

FORM APPROVED
OMB NO. 0579-0036

2. HEADQUARTERS RESEARCH FACILITY *(Name and Address, as registered with USDA, include Zip Code)*

REPORT OF ANIMALS USED BY OR UNDER CONTROL OF RESEARCH FACILITY *(Attach additional sheets if necessary or use this form.)*

A. Animals Covered By The Animal Welfare Regulations	B. Number of animals being bred, conditioned, or held for use in teaching, testing, experiments, research, or surgery but not yet used for such purposes.	C. Number of animals upon which teaching, research, experiments, or tests were conducted involving no pain, distress, or use of pain-relieving drugs.	D. Number of animals upon which experiments, teaching, research, surgery, or tests were conducted involving accompanying pain or distress to the animals and for which appropriate anesthetic, analgesic, or tranquilizing drugs were used.	E. Number of animals upon which teaching, experiments, research, surgery or tests were conducted involving accompanying pain or distress to the animals and for which the use of appropriate anesthetic,analgesic, or tranquilizing drugs would have adversely affected the procedures, results, or interpretation of the teaching, research, experiments, surgery, or tests. *(An explanation of the procedures producing pain or distress in these animals and the reasons such drugs were not used must be attached to this report)*	F. TOTAL NO. OF ANIMALS (Cols. C + D + E)
Raccoon	0	0	0	67	67
Marmot	0	0	9	0	9
Ground squirrel	0	0	35	0	35
Pocket gopher	0	3	0	0	3
Cotton rat	0	30	0	0	30
Mule deer	14	0	16	0	16
Elk	3	10	15	0	25

ASSURANCE STATEMENTS

1) Professionally acceptable standards governing the care, treatment, and use of animals, including appropriate use of anesthetic, analgesic, and tranquilizing drugs, prior to, during, and following actual research, teaching, testing, surgery, or experimentation were followed by this research facility.

2) Each principal investigator has considered alternatives to painful procedures.

3) This facility is adhering to the standards and regulations under the Act, and it has required that exceptions to the standards and regulations be specified and explained by the principal investigator and approved by the Institutional Animal Care and Use Committee (IACUC). A summary of all the exceptions is attached to this annual report. In addition to identifying the IACUC-approved exceptions, this summary includes a brief explanation of the exceptions, as well as the species and number of animals affected.

4) The attending veterinarian for this research facility has appropriate authority to ensure the provision of adequate veterinary care and to oversee the adequacy of other aspects of animal care and use.

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL
(Chief Executive Officer or Legally Responsible Institutional official)
I certify that the above is true, correct, and complete (7 U.S.C. Section 2143)

SIGNATURE OF C.E.O. OR INSTITUTIONAL OFFICIAL	NAME & TITLE OF C.E.O. OR INSTITUTIONAL OFFICIAL *(Type or Print)*	DATE SIGNED
	(b)(6), (b)(7)c	

APHIS FORM 7023A (Replaces VS FORM 18-23 (Oct 88), which is obsolete)
(AUG 91)

PART 1 - HEADQUARTERS

AUG 2 4 2007

Column E Explanation

This form is intended as an aid to completing the Column E explanation. It is not an official form and its use is voluntary. Names, addresses, protocols, veterinary care programs, and the like, are not required as part of an explanation. A Column E explanation must be written so as to be understood by lay persons as well as scientists.

1. **Registration Number:** 83-R-003

2. **Number** 67 **of animals used in this study.**

3. **Species (common name)** Raccoon **of animals used in the study.**

4. **Explain the procedure producing pain and/or distress.**

The study was designed to characterize how long current rabies vaccines afford protective immunity to raccoons. Two unvaccinated raccoons (positive controls) and the rest of the study animals (vaccinated against rabies) were challenged with live rabies virus. Animals were monitored twice a day and when they began emitting a high-pitched squeaking noise, the frequency of inspection was increased to 4 times a day i.e.. approximately every 6 hours. The following signs were used to indicate that the animal was rabid: marked ataxia, paralysis, circling, rapid pacing,increased activity, and other neurological signs. Animals displaying these signs were killed within an hour of displaying the signs.

5. **Provide scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain and/or distress relief would interfere with test results. (For Federally mandated testing, see Item 6 below)**

To administer pain and/or distress relieving drugs e.g.. anesthetics, tranquilizers, sedatives or analgesics would have interfered with or masked the characteristic clinical signs described above potentially prolonging the duration of clinical disease. Only the two unvaccinated raccoons were expected to develop clinical disease. Animals with vaccination failure would also be anticipated to develop clinical disease. It is only by observing the clinical signs that we could determine whether or not vaccination was successful. Use of positive controls was the only way to ensure that we were working with live rabies virus.

6. **What, if any, federal regulations require this procedure? Cite the agency, the code of Federal Regulations (CFR) title number and the specific section number (e.g., APHIS, 9 CFR 113.102):**

Agency________________ **CFR**________________

AUG 2 4 2007

Registration number 83-R- 0003
November 28, 2006

Summary of exemptions to the animal welfare act

1. The Animal Care and Use Committee approved an exemption to the animal welfare act which allows an investigator working with ground squirrels to restrict access to food but not water for 1-7 days in these animals. The goal of the study is the molecular and hormonal mechanisms that allow ground squirrels to adapt to lack of food intake in preparation for hibernation. An excerpt of the justification provided by the investigator is included below.

Justification for controlled access to food.

The genus Spermophilus includes many ground squirrels that undergo periodic bouts of torpor usually during the winter hibernation period. These animals fatten for winter hibernation throughout the summer and early fall, and then voluntarily cease to feed for a period of nearly 7 months. During this period, their metabolism must undergo some very extraordinary changes: with no food intake, the gut must change and the metabolic pathways that provide nutrients to the various tissues must also account for the lack of food intake. We know that fats become the dominant fuel source during most of the winter and particularly at low tissue temperature. But other fuels are important (Buck and Barnes,B., Am. J. Physiol. 279: R255,2000) and it is known that long term fasting by these mammals and birds can be characterized by three phases (Y. Cherel and Y. Le Maho, Am. J. Physiol. 249:R387,1985). The exact changes in cellular metabolism have not been elucidated at the molecular level during these fasting phases.
The question the ACUC committee will undoubted have is whether one is justified in allowing this mammal to fast for nearly a week. I believe the experiments are justified for the reasons and rationale cited above and the following: 1) Several fasting studies have been performed on ground squirrels that are hibernators and no deleterious effects other than body mass loss (which is what most were studying) were observed (**References: Anderson et. al. Fatty acid synthetase in control, starved and refed Richardson's ground squirrel, Comp. Biochem. Physiol. A 93 (3): pg. 613-6, 1989; Carey, H. Effects of fasting and hibernation on ion secretion in ground squirrel intestine Am. J. Physiology 263: (Rr1203-8, 1992; Andrews et.al. Hibernation reduces pancreatic amylase levels in ground squirrels. Comp. Biochem. Physiol. Vol. 134,3: 573-578, 2003**); 2) During the summer, ground squirrels routinely do not eat periodically due to weather, drought, and other maladies that arise in their environment (G. Michener, The Biology of Ground-Dwelling Squirrels, 1984) Thus, the stress of at most a 6-day fast will not cause death in the animal. In point of fact, many of the fasting studies that contrast active summer animals to winter hibernating animals are flawed because the lack of food intake in the winter can alter so many metabolic parameters. Animals in the summer should be at least partially fasted when comparing energy fuel utilization between the two states.

AUG 24 2007

Colorado State University
Knowledge to Go Places

(b)(6), (b)(7)c

www.colostate.edu

August 21, 2007

Robert M. Gibbens, DVM
Regional Director – Animal Care
USDA, APHIS, Animal Care Western Regional Office
2150 Centre Avenue, Building B, Mailstop 3W11
Fort Collins, CO 80526

Dear Dr. Gibbens,

I am sending an updated annual report for FY06, as discussed with our local inspector. The exemptions as previously reported have not changed.

The original report contained animals that should have not been included in the report, resulting in an over-reporting of the numbers of animals used. Based on discussions with our inspector the following have now been excluded:

- Food and fiber studies
- Client owned animals
- Field studies
  - Observations only, no material alterations, minor procedures involving trapping and releasing and no significant interference with activities or life; collection of materials e.g. euthanasia and tissue collection
  - No major procedures performed e.g. teeth extraction without anesthesia, abdominal surgery
- Management activities

I have included the Elk and Mule deer studies that were performed in collaboration with Veterinary Services (VS) at (b)(2)High, (b)(7)f because those activities had not been reported by VS. VS will start reporting those studies in their annual reports beginning this year. Animal activities performed at (b)(2)High, (b)(7)f facilities were reported by the [redacted] in their annual reports.

(b)(2)High, (b)(7)f

Sincerely,

(b)(6), (b)(7)c

AUG 24 2007